

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/15672

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl⁷ G09G3/30, G09G3/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
Int.Cl⁷ G09G3/30, G09G3/20

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2004
Kokai Jitsuyo Shinan Koho 1971-2004 Jitsuyo Shinan Toroku Koho 1996-2004

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP 2002-287700 A (Matsushita Electric Industrial Co., Ltd.), 04 October, 2002 (04.10.02), Par. Nos. [0006] to [0014], [0091] to [0099]; Figs. 1 to 4, 14 to 18 & WO 02/77959 A1 & US 2003/42118 A1	1 2
Y	JP 5-303078 A (Oputonikusu Kabushiki Kaisha), 06 November, 1993 (06.11.93), Claim 1; Par. No. [0009] (Family: none)	2
Y	JP 2001-125547 A (Sony Corp.), 11 May, 2001 (11.05.01), Par. Nos. [0019] to [0021]; Fig. 5. & CN 1296255 A & KR 2001-40109 A & TW 478295 A	2

☒ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search
09 March, 2004 (09.03.04)

Date of mailing of the international search report
23 March, 2004 (23.03.04)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

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INTERNATIONAL SEARCH REPORT

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PCT/JP03/15672

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2001-159871 A (Sharp Corp.), 12 June, 2001 (12.06.01), Par. Nos. [0007], [0026], [0027], [0032], [0033], [0042]; Figs. 1 to 3, 9, 11 (Family: none)	2

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Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

(See extra sheet)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1, 2

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

Continuation of Box No. II of continuation of first sheet (1)

The technical feature common to claims 1-10 is the technical feature of claim 1.

However, the search has revealed that this technical feature is not novel since it is disclosed in document JP 2002-287700 A (Matsushita Electric Industrial Co., Ltd.) 04 October, 2002 (04.10.02), Par. Nos. [0006] to [0014], [0091] to [0099], Figs. 4, 15. The moving picture and the still image of the aforementioned document correspond to the type of the image content.

As a result, this technical feature makes no contribution over the prior art and cannot be a special technical feature within the meaning of PCT Rule 13.2, second sentence. Accordingly, there is no technical feature common to claims 1-10. Since there exists no other common feature which can be considered as a special technical feature within the meaning of PCT Rule 13.2, second sentence, no technical relationship within the meaning of PCT Rule 13 between the different inventions can be seen.

Consequently, it is obvious that claims 1-10 do not satisfy the requirement of unity of invention.

Claim 2 relates to the technical feature that "the backlight light source performs entire surface flush light emission for each one frame cycle in synchronization with a vertical synchronous signal supplied to the liquid crystal display panel."

Claim 3 relates to the technical feature that "the backlight light source performs successive scan ON in synchronization with the vertical synchronous signal and the horizontal synchronous signal having a plurality of light emission regions supplied to the liquid crystal display panel."

Claim 4 relates to the technical feature that "according to the ON period of the backlight light source, the light emission intensity of the backlight light source is varied."

Claim 5 relates to the technical feature that "according to the ON period of the backlight light source, the gradation level of the input image signal is varied."

Claim 6 relates to the technical feature that "according to the ON period of the backlight light source, the gradation voltage applied to the liquid crystal panel is varied in accordance with the input image signal."

Claim 7 relates to the technical feature that "according to the type of the image content, the frame frequency of the input image signal is varied."

Claim 8 relates to the technical feature that "according to the content information contained in the broadcast data, the type of the image content to be displayed is detected."

Claim 9 relates to the technical feature that "according to the content information obtained from an external medium, the type of the image content to be displayed is detected."

Continuation of Box No. II of continuation of first sheet(1)

Furthermore, the technical feature common to claims 1-43 relates to "a liquid crystal display device for writing an image signal to be displayed into a liquid crystal display panel and intermittently turning ON the backlight light source within one frame period. the device comprising means for detecting the type of the image content to be displayed and means for performing variable control according to the type of the image content detected.

However, the search has revealed this technical feature is not novel since it is disclosed in the aforementioned document JP 2002-287700 A (Matsushita Electric Industrial Co., Ltd.) 04 October, 2002 (04.10.02), Par. Nos. [0006] to [0014], [0091] to [0099], Figs. 4, 15.

As a result, this technical feature makes no contribution over the prior art and accordingly, cannot be a special technical feature within the meaning of PCT Rule 13.2, second sentence. Consequently, there exists no technical feature common to all the claims. Since there exists no other common feature which can be considered as a special technical feature within the meaning of PCT Rule 13.2, second sentence, no technical relationship within the meaning of PCT Rule 13 between the different inventions can be seen.

Accordingly, it is obvious that claims 1-43 do not satisfy the requirement of unity of invention.

Claims 11-17 relate to the technical feature that "a period for supplying a black display signal to the liquid crystal display panel is variably controlled."

Claims 18-23 relate to the technical feature that "the ratio of display period of an image signal within one frame period is variably controlled."

Claims 10, 24-32 relate to the technical feature that "the ON time of the backlight light source is variably controlled according to a user instruction."

Consequently, there exist eleven inventions.